

ANALYST:		VPDES NO.	
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Instrument: _____ Parameter: Total Residual Chlorine (TRC)
 Method: DPD Colorimetric (HACH Colorimeters/Spectrophotometers)
 11/2014

METHOD OF ANALYSIS:

	HACH Manufacturer's Instructions (Method 8167) plus an edition of <i>Standard Methods</i>		
	21st Edition of <i>Standard Methods</i> 4500-Cl G-2000 (SM 21 Cl)		
	22 nd Edition of <i>Standard Methods</i> 4500-Cl G-2011 (SM 22 Cl)		
		Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for <u>each analyst/operator</u> performing this analysis? NOTE: Analyze 4 samples of known TRC. Must use a lot number or source that is different from that used to prepare calibration standards. May not use Spec [√] ™. Acceptance range is 70-130% recovery <u>and</u> 20% Relative Standard Deviation (RSD) <u>or</u> within PT specified acceptance range <u>and</u> 20% RSD. [SM 1020 B.1]		
2)	Is calibration curve developed with daily verification using a high and a low standard? NOTE: May use manufacturer's installed calibration and commercially available chlorine standards, or Spec [√] ™, for daily calibration verifications. [SM 21 1020]		
3)	IF a replicate sample is analyzed is there a written procedure for which result will be reported on DMR (Sample or Replicate) and is this procedure being followed? [DEQ – based on EPA Good Laboratory Practices Standards]		
4)	Is a Laboratory Control Sample (LCS) tested at least annually and are results within acceptance criteria? [SM 21 B 2. or SM 22 1020 B 3.] NOTE: LCS should be a purchased Proficiency Test (PT) sample or if a known standard different from the calibration standards is used. Use the PT acceptance criteria when given or use 70-130% recovery <u>and</u> 20% Relative Standard Deviation (RSD) as the acceptance criteria.		
5)	Are the DPD Powder Pillows stored in a cool, dry place? [Mfr.]		
6)	Are the pillows within the manufacturer's expiration date? [Mfr.]		
7)	Are pillows appropriate for the sample size being analyzed and for <u>Total</u> Residual Chlorine		
8)	Has buffering capability of DPD pillows been checked annually? (Pillows should adjust sample pH to between 6 and 7) [Mfr.]		
9)	When pH adjustment is required, is H ₂ SO ₄ or NaOH used? [Hach 11.3.1]		
10)	Are cells clean and in good condition? [Mfr.]		
11)	Is the Hach colorimeter program set to measure "TRC, mg/L"? [Mfr.]		
12)	Is the low range (0.01 mg/L resolution) used for samples containing residuals from 0.1 mg/L - 2.00 mg/L? [Mfr.]		
13)	Is the 10-mL cell (2.5-cm diameter) used for samples from 0-2.00 mg/L? [Mfr.]		
14)	Are samples analyzed within 15 minutes of collection? [40 CFR Part 136]		
15)	Is meter zeroed correctly using only sample for the blank analysis? [Mfr. and SM 21 1020 B.4. or SM 22 1020 B.5.]		

16)	Is the instrument light screen placed correctly on the meter body when the meter is zeroed and when the sample is analyzed? [Mfr.]		
17)	Is the DPD Total Chlorine Powder Pillow mixed into the sample? [Hach 11.1]		
18)	Is the analysis made at least three minutes but not more than six minutes after Powder Pillow addition? [Hach 11.2]		
19)	If read-out exceeds "2.19 mg/L", is the original sample diluted correctly, and then reanalyzed within 15 minutes of the original collection time? [Hach 1.2 & 2.0]		

PROBLEMS: